
ANNUAL REPORT



2011

LAKE COUNTY ENGINEER

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LAKE COUNTY ENGINEER



Blackbrook Road Main County Engineer Garage

2011 was a very busy construction year. We completed ten (10) projects at a cost of approximately \$8,400,000. We received approximately \$2,800,000 in ARRA funds & approximately \$3,200,000 in Federal Highway Funds through NOACA and CEAO programs.

The balance for the construction monies was provided by the Ohio Public Works Commission and the Lake County Engineer's Office. Seven of the ten projects were managed by the Lake County Engineer's Office with only the ARRA and Auburn Road projects managed by outside consultants.

2012 will not be as active as 2011, however, we are actively preparing for a very busy 2013. Our overall income is about 2% below 2007 levels and inching upward. We had three (3) employees retire and will not be replacing them in the near future. We are continuing our efforts to find new, innovative ways to stretch our dollars.



Very truly yours,

James R. Gills, P.E., P.S.
Lake County Engineer

COMPLETED PROJECTS

| PROJECT | LOCATION | COST | FUNDING SOURCE(S) | LAKE COUNTY ENGINEER SHARE |
|---|---|-------------|-----------------------|----------------------------|
| Auburn Road Resurfacing | Concord Township | \$894,009 | NOACA | \$178,802 |
| County Line Road Reconstruction Project | Madison Township | \$846,361 | OPWC | \$583,989 |
| Dodd Road Bridge Replacement | Willoughby Hills | \$960,444 | CEAO | \$192,089 |
| Fairgrounds Road Improvements | Concord Township & Painesville Township | \$2,396,894 | ARRA/NOACA | \$34,958 |
| Green Road Culvert & Drainage Improvements | Madison Township | \$113,792 | LCSMD Madison Twp. | \$77,366 |
| Lake Road Improvement | Madison Township | \$1,878,245 | ARRA/NOACA | \$264,138 |
| Prouty Road Bridge Superstructure Replacement | Concord Township | \$289,101 | OPWC | \$115,640 |

2012 Proposed Capital Improvements

| PROJECT | LOCATION | COST | FUNDING SOURCE | ENGINEER'S SHARE |
|--------------------------------------|------------------|-------------------------|----------------|-------------------------|
| Bacon & Blackbrook Roads Resurfacing | Painesville Twp. | \$640,000 (Estimate) | OPWC/ODNR | \$125,000 (Estimate) |
| Leroy-Thompson Road Bridge | Leroy Twp. | \$339,133 | CEAO (80%) | \$67,827 (20%) |
| Hoose Road | Concord Twp. | \$360,000 | OPWC | \$180,000 |

Blackbrook Road & Bacon Road Resurfacing The project consists of resurfacing Blackbrook Road (Newell Street to Mentor Corporation Line) for a total of 1.25 miles & Bacon Road (approximately 700' south of Blasé-Nemeth Road to Lake Road) for a total of 1.33 miles.



The asphalt used in this project will use recycled rubber tires instead of 100% new liquid asphalt binder. Approximately 4,400 tires will be used as part of the project. This could be considered the first **green project** for the department.

Funding for the project is from ODNR and OPWC grants. The estimated cost of the project is \$640,000.00. The project will begin in mid April and be completed by the end of May 2012.



Dodd Road Bridge Replacement

Based upon the structurally deficient condition of this bridge over the Chagrin River in the City of Willoughby Hills, the bridge replacement included roadway improvements. The project received 80% federal bridge funds with a remaining local share amount. The project required a detour via US 6, SR 174 and Eagle Road and began in the spring of 2011 and finished late fall the same construction season. Final Construction Cost: \$1million.

Fairgrounds Road Improvements

This was a 100% Federally Funded Stimulus Project in Painesville and Concord Townships. The improvement of 1.01 miles of Fairgrounds Road (CR 331) from Woodland Road to and inclusive of the SR 84 intersection included new pavement, curbs, drainage, paved shoulders, drive aprons, a left turn lane for Fairgrounds and SR 84 at the intersection, and signal modifications. Improvements provide better sight distance, a safer intersection with better traffic movement, wider pavement, a bicycle friendly design and improved drainage. The final construction cost was \$2,296,894.28 and was paid for by the American Recovery and Reinvestment Act (ARRA).



Lake Road Reconstruction

This was a Federally Funded Stimulus Project in Madison Township from Hubbard Road to Bennett Road. The project included reconstruction of the roadway similar to the project completed from Bennett to Dock Road a couple years ago. The project was planned to maintain traffic one direction eastbound only during construction. Westbound traffic was detoured via Bennett Road, Chapel Road and Hubbard Road. Construction began in the spring of 2011 and finished in the same construction season. The total contract was awarded for \$2,242,833.40 and was paid for by ARRA & NOACA.

Prouty Road Bridge Rehabilitation

The structure is located just east of Morley Road over Ellison Creek in Concord Township. The upper portion of this structure was replaced due to the poor condition of the main steel members. Re-use of the existing stone foundations on the same alignment afforded safety improvements with minimal impacts. The project added four additional feet of clear distance through the structure and approach guardrail. The project required a detour via Auburn, Girdled, Hermitage and Morley Roads and began in the summer of 2011 and finished in the same construction season. A grant from the Ohio Public Works Commission (OPWC) and local match monies funded the project. Final Construction Cost: \$289,101.00.



EMERGENCY

Mill Morr Road

This drainage structure just north of Jackson Street in Painesville Township unexpectedly collapsed and was replaced utilizing emergency Ohio Public Works Commission (OPWC) funds with a local match. The grant secured from OPWC was for \$172,000.

This project required a detour via Jackson Street, Nye Road and US Route 20. Construction began in the spring of 2011 and was completed in July of 2011.

Final Construction Cost: \$225,000.00



River Road

A heavy downpour washed out a culvert on River Road, near the SR84 intersection in Perry Township.

We were able to secure an emergency grant from the Ohio Public Works Commission (OPWC) in the amount of \$90,000.00. We also had sufficient unused, large elliptical pipe in our yard which had previously been gifted to us by ODOT.

Using a combination of our forces and a local contractor, we were able to start repairs within two (2) weeks and finished the project in approximately forty (40) days – record time.



R E T R O R E F L E C T I V I T Y

New standards for sign retroreflectivity became effective in January 2008 when Revision Number 2 to the Manual on Uniform Traffic Control Devices (MUTCD) was adopted. The revision set the following time table for local agencies to comply:

- January 2012 - Select and implement an assessment or management method to maintain traffic sign retroreflectivity at or above established minimum requirements.
- January 2015 - Replace all regulatory, warning and ground mounted guide signs except for street name signs that were identified in the assessment or management method as failing to meet minimum requirements.
- January 2018 - Replace all overhead guide signs and street name signs that were identified in the assessment or management method as failing to meet minimum requirements.

The Lake County Engineer's Office developed an assessment/management method and continues to manually check reflectivity values with a reflectometer. All of this information is being compiled in ArcGIS to create a new interactive sign inventory. In addition, we received \$39,650.00 in Sign Grants through the CEAO in 2010-2012 that have helped offset the federal mandate replacement cost of \$90,000.00 for 1,900 signs in our 3,500 sign inventory. Our sign shop has proactively made new signs in compliance with the new reflectivity standard since 2006.

Pavement Markings



The Lake County Engineers Office contracted with Mar-King Construction, Inc. to stripe 87.02 miles of center line and 191.80 miles of edge line on County maintained roads. Project cost: \$106,747.58

In a cooperative effort with our townships, Mar-King also striped Chapel Road and Green Road in Madison Township and Shepard Road in Perry Township. The Townships received the same prices as the County but were billed directly.

DUTIES OF THE COUNTY ENGINEER

HIGHWAYS

The Lake County Engineer's Office is responsible for maintaining, constructing and improving 152 miles of county roadway. Responsibilities range from resurfacing, reconstruction and widening projects to Highway Maintenance Department operations. This work includes pavement and berm repairs, drainage upgrades, pavement markings, traffic signal management, sign and guardrail installation, & snow and ice removal.

During the winter months, our crews work around the clock as needed to maintain safety on the county road system as well as 100 lane miles of State Route 2. We historically use about 4,000 tons of salt on SR2 for a normal winter. County highways, mainly located in eastern Lake County, require between 5,000-7,000 tons of salt.

The combination of lower salt prices and modest snowfalls resulted in dramatic savings of nearly \$315,000 in salt costs as shown below:

| WINTER | COUNTY ROAD SYSTEM | STATE ROUTE 2 | TOTAL |
|-----------|--------------------|---------------|-----------|
| 2011-2012 | \$108,600 | \$124,700 | \$233,300 |
| 2010-2011 | \$278,100 | \$269,900 | \$548,000 |

BRIDGES

As a component of the county highway system, bridges are one of the major responsibilities of the County Engineer. The County Engineer has general charge and supervisory authority over new construction, reconstruction, improvement, maintenance and repair of all bridges, including culverts, on county roads.

The Lake County Engineer is currently responsible for the inspection, maintenance and rebuilding of 105 county bridges, 684 culverts, as well as inspection, maintenance and reconstruction of approximately twenty (20) retaining walls along county routes.

Additionally, the County has shared maintenance responsibility for 44 DOT bridges along State Route 2.

SURVEYING

The County Engineer, as a Registered Professional Surveyor and Professional Engineer, is responsible for all county survey work required by law in connection with the location, construction, repair or maintenance of county highways, county bridges, and petition ditches as well as all other surveys that are ordered by the Court, and surveys for the Township Trustees with regard to road locations and road improvements.

The most prominent types of surveys are related to the improvement of highways, bridges and petition ditches. The costs of these types of surveys are considered to be part of the improvement costs. Following are some examples of surveys that may be performed by the County Engineer.

- Highway and Bridge Improvements
- Petition Ditch Improvements
- Determining True Line of Road
- Establishment of Corners
- County and Township Lines
- Survey of Land Sold For Taxes



RIGHT-OF-WAY

In many instances additional right-of-way, either by easement or warranty deed, is required for a public improvement. The Board of County Commissioners in making a finding for an improvement may acquire right-of-way through donation of land, payment of compensation and damages, or appropriation of property. In all cases, surveys are required to determine property lines and acres of take.

PERMITS

The Lake County Engineer's Department has the responsibility of monitoring the use of and coordinating the various utilities within the Rights of Way of the Lake County Road System. The use of a Permit System allows the County Engineer to control the location, depth, and proximity of the road pavement and drainage system to other equally important utilities (i.e. water, gas, electric, phone, and cable). The permit requires a bond in an amount equal to the cost to repair the pavement or right of way damaged by the utility installation.

In 2011, The Lake County Engineer's Department issued:

| | |
|--|----------------|
| Right of Way Usage Permit: | 19 each |
| Permit For Road Use by an Overweight Vehicle: | 2 each |

The County Engineer's Office also issues permits for the movement of overweight and oversize loads over County highways. These permits define the gross weight of the overload, the exact route of the load, and the traffic control requirements for the move. This permit requires a bond in an amount determined by the cost to repair or replace potentially damaged pavement and/or drainage structures on a proposed route.

For Right of Way Usage Permits issued, the utility installation was completed and the road pavement and/or right of way were repaired to their original condition. The overweight vehicle permits resulted in successful moves of large critical pieces of equipment over County highways with no damage to the pavements or drainage systems.

TAX MAP

The Engineer is required to keep maps and records of surveys performed by the Engineer or the Engineer's Deputies.

The Tax Map Department is responsible for making, correcting, and keeping up to date a complete set of tax maps of the county. Such maps show all original lots and parcels of land, all divisions, subdivisions, and allotments with the name of the owner of each original lot or parcel and of each division, subdivision, all transfers of property, showing the lot or parcel of land transferred, the name of the grantee, and the date of the transfer. Plats and Archived Tax Maps may be found on-line: <http://www.lakecountyohio.gov/Default.aspx?alias=www.lakecountyohio.gov/lakegis>

In 2011, The Lake County Engineer & Tax Map Department prepared a new Lake County Highway Map. Creating this map in-house allowed us to control quality as well as cost.



DRAINAGE ENGINEER

In Lake County, the County Engineer is also the Lake County Drainage Engineer providing his services to the Lake County Stormwater Management Department. This title also bestows the duty of being Co-administrator of the Lake County Flood Damage Prevention Regulations for the Unincorporated Areas of Lake County. Any activity within the designated Special Flood Hazard Area (SFHA) requires a Floodplain Development Permit. Building within floodplains has proven perilous in recent years, and this is reflected in the fact that only 5 permits were reviewed and approved by the Drainage Engineer in 2011.

SITE PLAN REVIEW

The Lake County Engineer began reviewing site plans at the Townships' request in 1978 "to direct runoff from a lot to an appropriate drainage facility". Although many things have changed, this statement has held the test of time for over 30 years and is still the major focus for reviewing individual residential and commercial improvements. Last year the Lake County Engineer's office approved almost 100 residential and 23 commercial site plans - a drastic decline from the heyday a few years ago. Major developments have come to a standstill with zero subdivision or multifamily developments being approved in 2011.

| Site Plans Reviewed | 2005 | 2011 |
|----------------------|------------|------------|
| Concord Township | 153 | 44 |
| Kirtland City | 18 | 12 |
| Kirtland Hills | n/a | 2 |
| Leroy Township * | 6 | 4 |
| Madison Township | 37 | 5 |
| Painesville Township | 110 | 23 |
| Perry Township * | 16 | 2 |
| Perry Village | 25 | 4 |
| Willowick | n/a | 6 |
| Total: | 365 | 102 |

* Indicates Township that is not part of the Lake County Stormwater Management Program

FINAL GRADE INSPECTIONS

As part of the Ohio Building Code revisions, the Lake County Engineer's office started conducting Final Grade Inspections for Concord Township, Leroy Township, Madison Township, Painesville Township, and Perry Township in 2007. Cities and Villages have their own Engineer to perform final grade inspections. In 2011 the Lake County Engineer's office performed 55 Final Grade Inspections.



Rain Garden at Lake County Fairgrounds

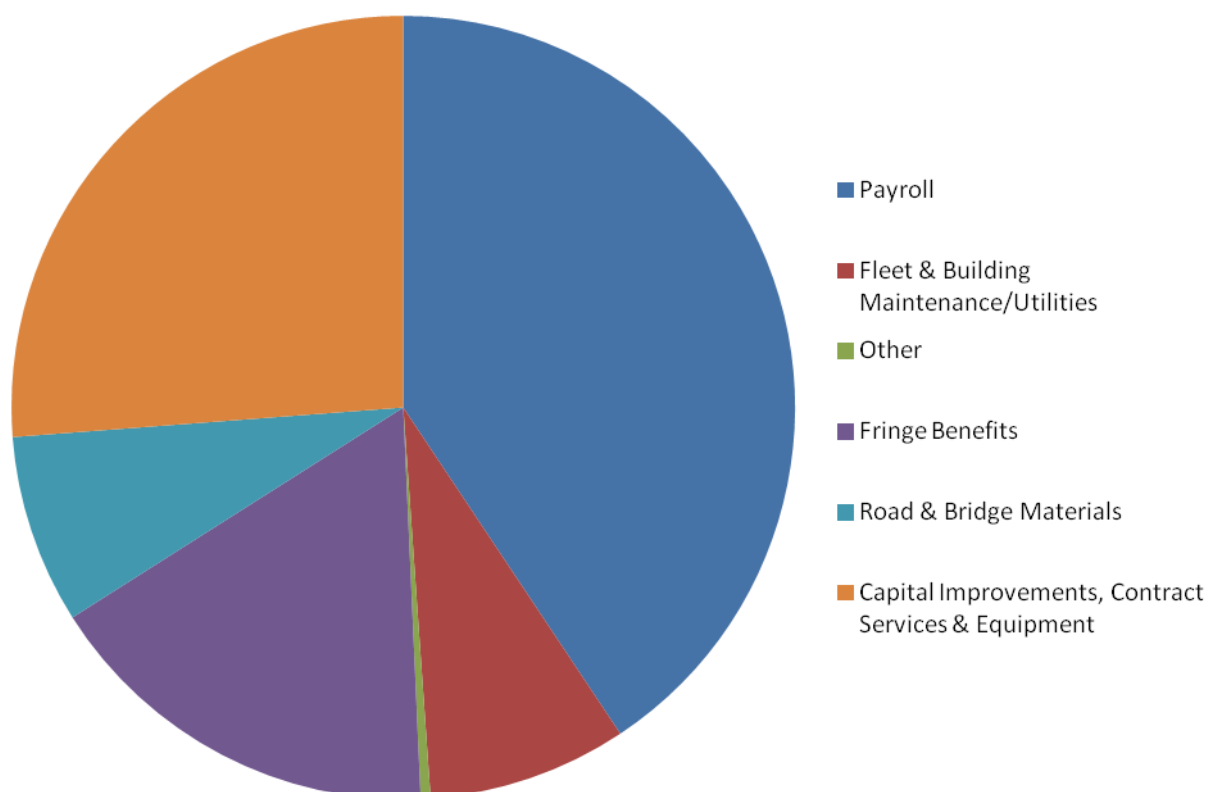
The process requires an on-site inspection to verify positive drainage away from the new dwelling. We also verify that yard drains (if required) have been installed and the proper conveyance method is in place to allow for positive drainage off the site. Where practical, downspouts are splash-blocked. When necessary we may make recommendations to minimize impacts to the adjacent properties. As an agent for the Lake County Stormwater Management Department, our office may also make suggestions regarding storm water Best Management Practices (BMP's) such as rain barrels, infiltration trenches or rain gardens.

Some contractors have embraced the Final Grade Inspection as a means of dealing with grading issues along property lines. Within subdivisions the Final Grade Inspection provides the necessary coordination to meet the goals of the Master Grading Plan.

FINANCIAL HIGHLIGHTS FOR 2011

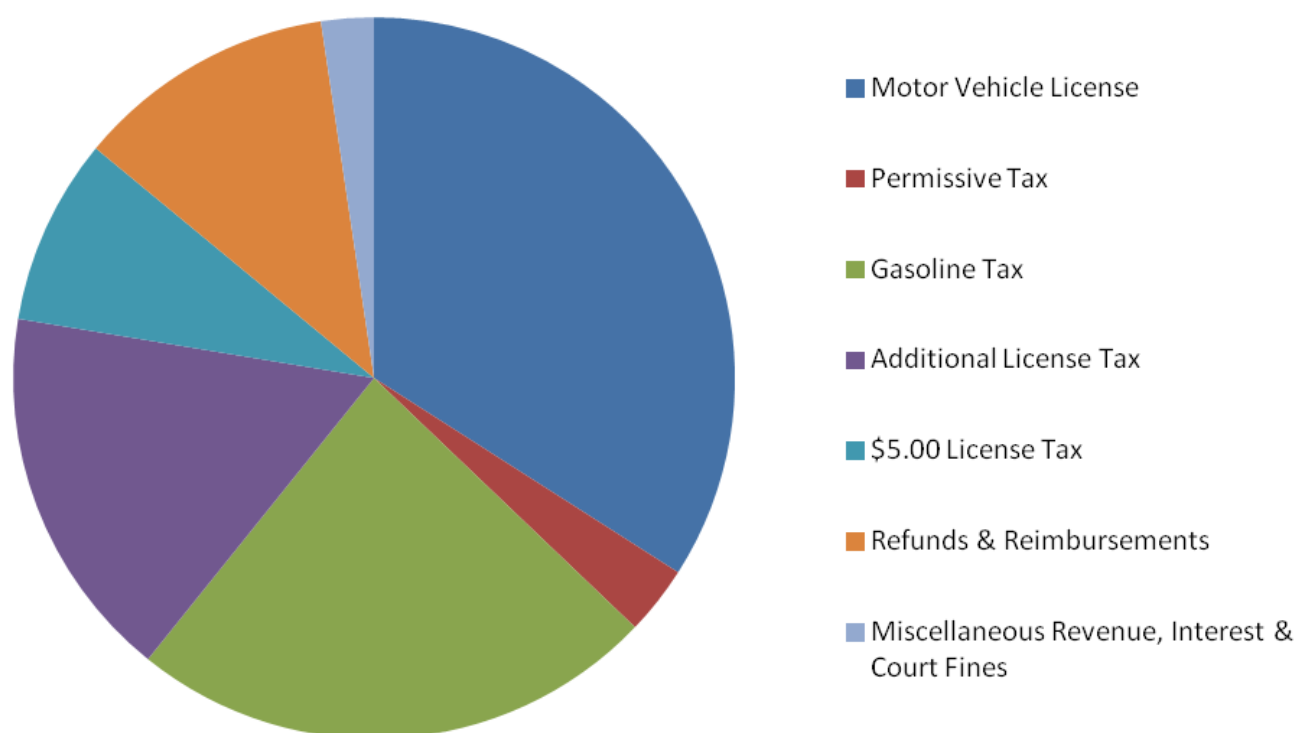
EXPENDITURES

| | |
|---|--------------------|
| Payroll | \$3,763,148 |
| Fleet & Building Maintenance/Utilities | \$762,216 |
| Other | \$37,271 |
| Fringe Benefits | \$1,546,713 |
| Road & Bridge Materials | \$721,866 |
| Capital Improvements, Contract Services & Equipment | \$2,425,439 |
| | \$9,256,653 |



REVENUE

| | |
|---|--------------------|
| Motor Vehicle License | \$3,327,635 |
| Permissive Tax | \$301,031 |
| Gasoline Tax | \$2,310,207 |
| Additional License Tax | \$1,646,706 |
| \$5.00 License Tax | \$816,812 |
| Refunds & Reimbursements | \$1,138,930 |
| Miscellaneous Revenue, Interest & Court Fines | \$230,447 |
| | \$9,771,768 |



\$5.00 License Tax

The County Engineer has had a freeway maintenance agreement with the cities along State Route 2 (SR2) in Lake County since the early 1970s. While ODOT assists financially on major rehabilitation work, the facility's maintenance expenses are shared on a 50% county/50% city cost basis. The 50% city share for Wickliffe, Willowick, Eastlake, Willoughby, Mentor, and Painesville is further distributed based on the number of lane miles within the respective corporation limits.

Services include snow and ice operations, pavement and bridge maintenance, accident repairs, mowing, noise walls, and lighting. Operations are conducted out of the county's SR2 maintenance garage in Willoughby. Maintenance costs vary from year-to-year, totaling \$1,276,930.71 last year. In 2011 the Lake County Engineer used 78% of \$5 license fee revenues as a maintenance subsidy to offset SR2 costs.

This is an excellent use of road and bridge funding in that it gives residents uniform highway maintenance, the cities receive budget assistance, and Lake County's high volume 'Main Street' is preserved as a valuable transportation asset for our future.

Funding from ODOT totaled almost \$200 million for the rehabilitation of SR2 and is nearing completion. This funding would not have been possible without the County Engineer's initiative to conduct a Major Investment Study in 2002 that justified ODOT's participation in the largest transportation project in Lake County's history.



Before: SR2 Westbound at Lost Nation Road



After: SR2 Westbound at Lost Nation Road